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ABSTRACT

Based on data gatered from interviews, observations, and document reviews during a 3-year qualitative examination of curriculum change projects in 14 elementary, junior, and senior high schools, this paper argues that the spread of new classroom practices within a school beyond a core committee of planners is determined by the orgaanizational structure of the school's four types of subunits, which are defined by the nature of the linkages they exhibit: "the social club" (characterized by congeniality, horizontal linkages, and much informal interaction among teachers about instructional matters); "the professional group" (horizontally linked but more formal in its adherence to written guidelines); "the administrator's delight" (vertically linked and willing to follow an administrator's directives); and "the egg crate" (loosely linked both horizontally and vertically and involving teachers who work in isolation, rarely discussing instruction). The paper first defines the concepts of organizational linkages, change implementation, and field agent strategies. Next, research procedures and background information are provided. Finally, the paper describes how different change strategies were appropriate or inappropriate in each subunit. Two tables provide data on the schools involved in the study and the quantity of implementation in the planning groups and in the schools as a whole. (PB)

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DIFFUSING CURRICULUM CHANGES WITHIN A SCHOOL: STRATEGIES AND STRUCTURE

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Abstract

This paper argues that the spread of new classroom practices within a school beyond a core committee of planners is determined by the organizational structure of the school's subunits (i.e., departments, grade-levels, or teams). Four types of subunits are distinguished according to the nature of the linkages in them and their effects on the quantity of change implementation are discussed. The paper is based on data gathered during a three-year qualitative examination of curriculum change projects in fourteen elementary, junior, and senior high schools.

DIFFUSING CURRICULUM CHANGES WITHIN A SCHOOL:

STRATEGIES AND STRUCTURE

"You obviously aren't familiar with elementary schools...Things spread through the grapevine like wildfire." This was a principal's somewhat disdainful response to a researcher's query about how many teachers in the school knew about a current change project. However, the principal's apparent confidence in the grapevine's efficiency was not well-grounded in reality. In the above school--and in 13 other elementary, junior high, and senior high schools which participated in a qualitative study of curriculum improvement--the communication and use of new practices was considerably more sporadic. Among some teachers in a school, information traveled swiftly; among other teachers, ideas were not exchanged at all.

This paper focuses on how new classroom practices spread within schools beyond a core committee of teachers responsible for planning and initially implementing the changes. The teachers participated in change projects intended to improve a school's program in either career education, citizen education, or basic skills. Assisted by field agents from an external agency, the teachers helped determine what specific changes to make. These included incorporating career awareness and citizenship activities into regular subject matter, increasing students' time on task, and resequencing subject area content.

Among the schools in the study, the spread of specific changes beyond the committee teachers was modest, at best. Yet, there were systematic patterns as to who changed and who did not. The explanations for the patterns centered around school organizational structure--more

specifically, with the interdependence (or linkages) (1) of teachers' work activities within school subunits (e.g., grade levels, departments, or teams) and (2) between teachers and administrators. Some of the teachers in the core planning groups worked in subunits where interaction about instructional matters was frequent. In such cases, changes readily spread from project teachers to non-project teachers. Additionally, principals in some schools devoted much attention to staff evaluations; and teachers acknowledged the importance of this, at least as a form of professional recognition. In these instances, the principal's incorporation of new practices into evaluations stimulated non-project teachers to also change.

The converse was also true. Where teachers rarely talked about their classroom activities with each other and administrators adopted a pro forma attitude about evaluations, changes did not tend to move very far beyond those formally involved in a project. These situations clearly had important implications for the external field agents who assisted the schools in the change process. To promote the spread of change throughout a school, different strategies had to be used depending upon structural differences among a school's subunits.

The remainder of this paper elaborates the themes identified above. It is organized as follows. The first section more carefully defines the concepts of organizational linkages, change implementation, and field agent strategies. In the next section, the research procedures are described and some brief background on the projects provided. Then, the emphasis shifts to depicting four types of school subunits, defined by the nature of the linkages they exhibit, and to describing how different change strategies

were appropriate or inappropriate in each. The paper concludes with comments directed toward both researchers and those who assist school change.

Background

The research upon which this paper is based was exploratory. Its purpose was to generate and refine ideas about curriculum change rather than to test a priori hypotheses. Over the three years of the study, a mingling of literature on school organization--particularly the loose coupling tradition (e.g., Weick, 1976)--and field observations led the research team to increase its attention to how linkages among staff members affected which teachers in a school eventually implemented project-related changes.

The term "linkages" refers to patterned behavior or procedures which affect the degree to which staff members in a school are able to function independently of one another (Louis, Molitor, and Rosenblum, 1979; Wilson and Corbett, 1983). It is used here instead of the more familiar term "loose coupling" popularized by Weick (1976) for two reasons. First, loose coupling places too much emphasis on one end of a more general conceptual dimension (Rosenblum and Louis, 1981); there can, in fact, be considerable variation in the way school subunits are organized. Second, this paper focuses on the bonds in subunits within a school. This contrasts to discussions about loose coupling which typically address slippages in the relationships among levels of local, state, and federal education systems.

Subunit linkages can be both horizontal and vertical. Within a grade level, team, or department, the interdependence of teachers' classroom behavior can be affected by the extent to which they talk to one another about instruction, observe one another's classrooms, jointly plan

activities, or establish curricula for certain subjects or courses. The more these kinds of interactions occur, the more likely it is that what one teacher does will be influenced by others in the subunit or, at least, by agreements made by the group. Similarly, the strength of the bonds between teachers in a subunit and the administration are affected by the nature of the interaction between the two. For example, a principal who habitually engages teachers in discussions about instructional matters either informally while passing in the hall or formally through careful evaluation is much more likely to influence day-to-day classroom events than one who rarely holds informal conversations and treats evaluation in a perfunctory manner. Of course, within a school the nature of vertical linkages can vary among subunits depending upon a number of factors which can affect teacher-administrator interactions, such as the principal's familiarity with course content.

Several researchers have referred to the peculiar effects that these linkages can have on change activities in a school. For example, it may be difficult to get a school that has tight linkages to agree to try a new practice because such a change disrupts a smoothly operating routine. However, once the new practice is accepted, knowledge about it quickly and naturally diffuses throughout the staff (Weick, 1976). The problem is the reverse in loosely linked schools. In these, teachers are free to experiment, as such behavior has no ramifications for other staff. Should an experiment prove tremendously successful, though, there are no existing communication mechanisms to aid the innovation's spread (Firestone and Herriott, 1981). Thus, tight linkages make adoption of innovative practices problematic, but facilitate implementation.

At present, the literature on linkages is mostly concerned with the school level. As initial field work progressed in this study, however, it was found that there were important differences in the kinds of interaction that went on within subunits. In a single school, it was not uncommon to find subunits with high interaction about instructional matters and others with much less interaction. Thus, field work and analysis began to operate on the premise that if the above arguments held for organizational differences among schools, they should hold for organizational differences among subunits within schools.

The emphasis in this paper is on accounting for the number of teachers in a school who made project-related changes. This way of measuring implementation has been termed the "quantity of implementation" by Rosenblum and Louis (1981) and seems most appropriate when the research problem entails explaining the spread of change.

Of course, if linkages prove to be salient explanatory factors in subsequent studies, then there would be major implications for those who assist schools through the change process. Such people are often referred to as "field agents." A field agent "is an individual...located outside of the boundaries of the client system, whose objective is to assist client(s)...to enhance the clients' functioning as educators or as an educational system" (Louis, 1981: 180). Thus, the term includes district curriculum coordinators working with schools, intermediate service agency or state education field staff, college and university personnel, and other consultants. The approach that these individuals use to work with schools is comprised of a variety of strategies, which may thought of as action plans representing agents' assumptions about how change can be best

promoted (Hall, Zigarmi, and Hord, 1979). Field agents seem to readily accept the idea that in any one school they may have to call on several action plans. Thus, using multiple strateegies is not new to them. What this paper explores is the possibility that which strategies are likely to be the most effective in terms of facilitating widespread use of new practices is determined largely by the nature of subunits' organization within a school.

Methods

This research was part of a three-year exploratory study of change in 14 elementary, junior high, and senior high schools. The schools participated in school improvement projects cooperatively with an external assistance agency. The projects focused on improving a school's instructional program in either basic skills, career education, or citizen education. Staff from the external agency assisted the schools by bringing in materials and procedures to plan needed changes, sharing knowledge about research and existing school curriculum programs that exemplified successful practices, and providing technical assistance by collecting and analyzing data to facilitate the school's innovation decision-making. In all cases, school staff were responsible for choosing classroom changes to be implemented. These included promoting career awareness in English, math, science, and social studies classes, highlighting good work habits, facilitating awareness of civic responsibility in regular classes, periodically assessing student time on task, restructuring class activities to avoid delays in moving from one activity to another, and sequencing the

curriculum of a subject so that skills addressed in achievement tests were taught prior to test administration.

The 14 schools in the study included five elementary schools, two middle schools, four junior highs, and three high schools. Table 1 shows the marked diversity among the schools according to size, location, and student population served. (All names given in the table are pseudonyms.) The external agency chose the sites for programmatic rather than research purposes. That is, the schools demonstrated a need or interest in project content areas. While this limited the generalizability of the findings, the rich mixture of settings, levels, and problems enabled the sample to be an invaluable source for generating insights into the change process.

Table 1 about here

The study relied heavily on qualitative research methods: interviews, observations, and document reviews. Field work was especially intensive in five of the schools. This concentrated effort grew out of increased recognition that in-depth research was needed to identify subtle differences in schools that could have substantial effects on the change process. Research resources dictated that intensive field work could not be done in all 14 sites. Field researchers in the five schools attended meetings between the external agency and the schools, visited classrooms, sat in the teachers' lounges, accompanied field agents as they worked with groups, and went to school and central office staff meetings. At the same time, numerous informal and formal interviews were conducted.

To ensure data comparability on major issues across all 14 sites, the research team periodically reviewed and discussed their field notes. As

critical issues were identified, structured open-ended interview guides were developed for use in formal interviews at all schools. In the nine schools where field work was not as intensive, events were tracked through periodic visits to them, attendance at planning meetings, occasional discussions with the field agents, and scheduled interviews.

Information on differences in subunit linkages came primarily from research activities in the five schools, particularly from observations of department meetings, interviews with non-project teachers, and focused interviews with project teachers. Data on which teachers in these schools actually made changes also came from these sources as well as classroom observations.

All field notes were transcribed onto tape and then typed. A topical index of over 100 issues was used to code the field notes. The codes and their location in the field notes were stored on computer to facilitate retrieval of specific information.

The issue of subunit linkages and whether other teachers in the group knew about and made project-related changes first appeared in one school. At that point the entire research team was sensitized to the issue, and the search for other illustrative cases was begun. A systematic mapping of the organization of every subunit in every school was not possible, but as knowledge about who changed was coupled with knowledge about the subunits to which teachers belonged and whether administrators had incorporated project-related materials into their interactions with teachers, the importance of linkages as an explanatory factor increased. Subsequent interviews in the remaining nine schools uncovered a few more instances.

Findings and Discussion

Fieldwork uncovered at least four types of subunits which could be distinguished on the basis of the nature of linkages in them. The first exhibited strictly horizontal linkages that resulted from a great deal of informal interaction among the teachers about instruction. This was labeled "the social club" to reflect the congenial tone of the interaction; but the term should not imply that gossip and rumor-mongering were the substance of the discussions. Instead, these teachers casually, but knowledgeably, discussed their business.

The second was called "the professional group." This type of subunit was also characterized by mostly horizontal linkages. But, in this case, ideas about what constituted good practice became formalized into written guidelines for courses to which all teachers adhered and to which all new teachers in the subunit were expected to adhere. This sense of shared standards for practice resembled the situation commonly believed to exist in established professions, like medicine (Schlechty, George, and Whitford, 1978).

The third type of subunit was "the administrators' delight." These were the subunits that, for whatever reason, readily followed an administrator's directives. In one English department, this vertical tie was strengthened because English was the administrator's content specialty as a teacher; in another school, the principal's devotion to constructive evaluation among the regular classroom teachers facilitated the establishment of strong vertical bonds with them.

The fourth type was "the egg crate" where both horizontal and vertical linkages were loose. Such subunits were by far the most common of the four

types. In these, teachers conducted their work out of the view of others and discussed instruction with one another only on rare occasions.

These differences in subunit organization played an important part in determining the extent to which implementation of project-related changes spread beyond original participants. Table 2 shows the quantity of implementation in the 14 schools and notes the number of teachers who were project participants, how many of these made changes, and how many non-project teachers made changes. It should be noted that the number of non-project teachers who changed is modest, roughly one-third of the total. This fact is consistent with Mile's (1981) argument that, on the whole, schools tend to be loosely coupled. The remainder of this section highlights the role of subunit organization in facilitating the spread of change that did occur and the strategies field agents could use to take advantage of or compensate for the presence or absence of particular types of linkages.

Type One: The Social Club

Natural diffusion as a strategy for spreading change enjoys a favorable position in the folklore of teaching. Numerous observers of school life have pointed to the faculty lounge as a more than adequate means for passing gossip, innuendo, hearsay, and knowledge among staff. Nevertheless, horizontal linkages were not uniformly strong within all subunits of a school. Subsequent interviews with teachers in the school revealed that information and change spread faster in some subunits than in others.

The success of introducing a new idea to a core group of teachers and then waiting for it to spread naturally throughout the school depended

highly on the presence of tight linkages among teachers in the various subunits. Where a subunit was linked by its instructional program or where two teachers had developed friendship or professional bonds, change readily spread; where teachers tended to work in isolation, change began and ended with the teacher who formally participated in the project.

For example, in one intermediate grade subunit at Smalltown Elementary, teachers routinely talked about instructional activities, planned together, and jointly evaluated the activities. Symbolic of this integration of work-related tasks was the fact that the teachers had placed their desks in a common work area in their end of the building. Two years after the project had ended, all of the teachers had implemented new instructional strategies to make better use of class time, including a complicated arrangement of team-teaching students. Staff new to the team quickly adopted similar strategies, to the point that the team captain once challenged a researcher to observe the classrooms and pick out the teacher who had been on the team for only five months.

On the other hand, this kind of integration was totally absent in one of the primary grade subunits in the same school. Teachers kept their desks and professional materials in classrooms, and little discussion and no joint planning took place. In this subunit, which had remained intact since the project ended, only the participating teacher ever made any changes.

Informal bonds also developed among pairs of teachers in several of the schools. This helped spread change from a teacher in the project to one who was not. This phenomenon was particularly apparent between two sets of teachers, one at Southend and the other at Patriot. In both

instances, the teachers so routinely shared ideas about teaching and coordinated instruction with one another that project-related information automatically became infused into their conversation.

The data are full of examples of changes both beginning and ending with planning team participants. Oldtown was typical of the six schools where changes spread to, at most, only one non-project participant. To the extent that any classroom changes were made, they were made by project teachers. Oldtown teachers said that a major reason other teachers did not pick up the changes was the lack of opportunity for teachers to talk with one another. One cause of this was a split schedule in which some teachers and students came to and left school early while others came and left later. The consequence was that there was only a very short time each day when every teacher in a department was physically present at school. Thus, few meetings or even informal conversations were possible. With no way to link teachers with one another, it was almost assured that information about the projects and new practices would remain solely with original participants.

These findings fly in the face of popular arguments that teacher-to-teacher communication is rapid and efficient. That impression may hold for some of the teachers some of the time, but it was not typical for most teachers in this study. The results of using a core committee of innovators to instigate change throughout a faculty naturally was uneven at best. Field agents can push the process along, however, by finding out where tight horizontal linkages do occur and inviting at least one of the teachers in the subunit to join a planning team. In fact, involving more

than one member of such a subunit may be an inefficient use of planning resources.

Type Two: The Professional Group

Fieldwork uncovered a department at Neighbortown, two at Green Hills, and one at Suburban where the horizontal linkages had a slightly different character than the "social clubs." To be sure, teachers met and talked with one another about instruction. However, they also reached decisions about guidelines for instruction in particular courses that the entire group was expected to follow. Had these curriculum decisions made by administrators, the subunits would have exhibited both tight horizontal and tight vertical linkages. In the professional groups, however, it was the teachers who had reached such agreements. This arrangement of subunit organization was not typical of any of the other subunits in the three schools where they were found.

There was a typical pattern by which change spread in these subunits. First, an innovative practice took hold as a promising idea among grade-level or department members, and then it was incorporated into the group's operating routine. In working with such subunits, the field agent's strategic problem was not how to spread change; the group's own communication and operating mechanisms took care of that. The problem was selling the group, not just an individual, on the idea in the first place.

The situation here was different from that of the social club where the goal was to recruit one teacher who was in touch with and well-respected by other teachers and then to let that person spread the new practice throughout the group. In the professional group not only were

members' work activities integrated, but they were also bound by established procedures. Individual teachers were not usually free to implement new practices without the advice and consent of the total subunit. To do so would be to treat cavalierly a curriculum already endorsed by the group.

The social studies department at Neighbortown was typical of the professional group. The departmental chairperson, a planning team member, resisted making any but the most perfunctory changes during the pilot test. Although at first field agents questioned this individual's commitment to the project, they soon realized that the root of the problem was not the chairperson's own reticence but the organizational nature of the subunit. Each teacher in the department taught according to a set curriculum to which they were all committed. Anything more than a cosmetic change in practice encroached on this commitment. The only way to modify the curriculum was for a teacher to develop a proposal and present it to the group. The group then rejected or accepted it as binding for the entire department.

Once this problem was brought to light, the field agent's task became to convince the subunit to alter its curriculum. In this case, the teacher finally requested that the field agent meet with the department and explain the rationale for making the proposed changes. The teacher had done so informally but felt the project would get the best hearing if the field agent became involved. The group subsequently acknowledged the project's objectives as valuable, incorporated some of them into its priorities, designed some initial changes, and established an agenda to tackle others. In the end, this one meeting accomplished more in terms of promoting

innovation in the department than had several months of nudging the individual teacher.

This example amply illustrates that individual resistance to change can be as much the result of subunit constraints as individual predilections. Resolving the problem may require meeting with an entire subunit and actually selling them on the idea. The bright side of this situation, though, is that because such department or grade-level subunits have established means for altering curricula, the problem of promoting implementation takes care of itself.

Type Three: The Administrators' Delight

Field agents may come across subunits--or in the case of Southend Elementary, an entire school--where most of the bonds are vertical; that is, teachers' actions are bound by, or are at least easily influenced by, administrative behavior or policies from higher levels. In fact, in this study, vertical linkages were more frequent than horizontal ones. Three kinds of vertical linkages were taken advantage of in the projects to promote implementation: (1) between performance evaluations and teacher behavior, (2) between curriculum guidelines and teacher behavior, and (3) between state mandates and school behavior.

Evaluations as a linkage. Principals at Smalltown Elementary, Smalltown Middle and Southend changed evaluation procedures to promote implementation effectively. What they did was simply to include project-related classroom changes on their checklist of teacher behaviors to observe. Although field agents feared that teachers might react negatively to this, such was not the case. Instead, the evaluations indicated to teachers that

the principal thought the changes important enough to assess whether they were actually being implemented. The effect was that all teachers became accountable for achieving project-related goals. Interestingly, teachers in some schools where principals avoided this use of evaluations indicated that without administrative mandates, there was little to induce some teachers to change. As one Neighbortown teacher said, "You need that little push.... [without it] I stick with what is comfortable to me."

At Southend, the effect of this practice was that almost every teacher made project-related changes, with the exception of the physical education, art, and music teachers. At the other two, vertical linkages were stronger with only some of the subunits. For example, the middle school administrator was a former English teacher and felt more comfortable intervening in that department. Other departments were not evaluated using the same criteria.

Curriculum guides as a linkage. Occasionally, teachers were bound to curriculum guidelines established by individuals rather than the entire subunit. In these instances, the most effective way to spur change beyond the planning team was to alter the guidelines. To do this, the field agent had to be sure to involve key decision-makers in planning. In the Professional groups, teachers made most of the curriculum decisions; and so, the entire department had to have a hand in making revisions. In several departments at Green Hills and Bigtown, the chairperson was the key decision-maker on curricular issues. Thus, the inclusion of these individuals in the planning process was critical. In fact, implementation did not really reach very far at Green Hills until the principal put department chairpersons in charge of designing new practices. In still other schools,

such as Patriot and Southend, curricular decisions were made at the district level. In these schools, then, administrators were crucial project participants.

State mandates as a linkage. In five of the schools, state education agency (SEA) mandates and program initiatives paved the way for implementation. Two compelling forces bound the SEAs and schools: money and regulations. In every school, project participants could point to a formal state goal verifying that the project was addressing critical educational priorities in the region. However, direct SEA involvement was rarely sought or even felt. The only exceptions were when the state made money available or issued a regulation governing school responsibilities for instruction in the project-related area. In cases where schools wrote proposals to obtain funds for project activities, the additional money gave a big boost to implementation primarily because the project could continue at full-speed in spite of local funding problems. State regulations, such as graduation requirements, had more direct effects on implementation. For example, at Oldtown, project-related classroom changes were a clear means of meeting one of the requirements. The district decided that the approach was appropriate for all faculty, and so, urged that the changes be made throughout the school.

Incorporating vertical linkages into a strategy. Given that these three types of vertical linkages can advance implementation in some schools at some times, how can the field agent determine which one to use where? The first step is to check a school's evaluation system. If evaluation is frequent and most teachers in a subunit say it is important, then encouraging modifications that complement the innovation can be useful.

Second, if such vertical linkage does not exist or there is a strong philosophical bias against what could be termed a "heavy-handed" approach, the field agent would be wise to assess the relationship between the formal curriculum and teacher behavior. Other writers have termed this kind of assessment as "curriculum-mapping" (English, 1978). Still, one should keep in mind that the relationships that characterize a school as a whole will not necessarily characterize relationships in each subunit. Where the curriculum does seem to be binding on instructional behavior, including key curriculum decision-makers in planning discussions could expedite implementation immensely. These decision-makers might be an entire department, a chairperson, or an administrator, depending upon how and by whom curricula are determined.

Third, the field agent should do a little information-gathering around SEAs to find out what is coming down the pike. There may be a logical tie-in between a change project and either funding opportunities or forthcoming state requirements that can provide a boost to implementation. In fact, Brickell (1980:207) argues that the most effective school improvement weapon is "a stinging mandate followed by a powerful technical assist." Although the sequence of the one-two punch may be reversed in some projects, the results can be the same.

Type Four: The Egg Crate

It is conceivable and probable that a field agent may encounter a school where most subunits have no significant linkages of any kind. Research suggests this is the modal situation in most schools (Miles, 1981); and it is clear from the above discussion where, at best, only 10 to 15

subunits with some kind of tight linkages were found that the schools in this study were, for the most part, loosely linked. Indeed, most school subunits resembled egg-crates. That is, teachers were in close proximity to one another but their work activities rarely touched. The data contained no instances of change having spread among the teachers in this situation.

In these cases, several field agents promoted implementation by establishing a temporary system where linkages were tighter. A temporary system was comprised of a subgroup of a school's staff which met for a special purpose for a limited duration (Miles, 1964)--in effect creating another subunit, temporarily put in place to facilitate change. The original planning committees in this study were good examples, and Table 2 is a testimony to their effectiveness. To move changes beyond the initial groups, field agents extended the concept of the temporary system to encompass more staff members.

One strategy to spread change was to expand membership in the temporary system gradually until every staff member is included. To an extent, field agents used this approach at Neighbortown and Green Hills. In both schools, new members were added to the planning team when it came time to actually design new classroom practices. These additional teachers eventually implemented changes to a similar extent as did original members. However, both field agents and participants saw problems with repeated iterations of expanding the team. Primary among these was the need to recapitulate and, occasionally, renegotiate decisions already made. Thus, the first expansion of the team was useful and effective, but participants were not very sanguine about the prospects of repeating the procedure several times.

The Middletown field agent took a slightly different tack. There, class schedules were reworked so that all the teachers in each grade would have a common planning period at least four days a week. Each grade was represented on the planning team and these representatives, in turn, became the "field agents" for the rest of the teachers in that grade. The intent at Middletown, then, was not so much to increase the size of one temporary system but to create five or six new systems to complement the original one. This effort met with somewhat mixed results. The reason, once again, had less to do with the temporary system's effectiveness than with getting it established. In this instance, teachers were not in the habit of using their planning periods in this way. When administrators began to take a less proactive part in seeing to it that meetings were held, the frequency of the meetings dropped considerably.

Extending the temporary system, then, was a potentially effective strategy where egg crate subunits predominated, with some caveats. Enlarging the original system seemed to become cumbersome rather quickly. Creating several new systems with original planning team members as leaders appeared more viable. But, the success of this method required careful attention to scheduling and sufficient administrative impetus to keep the system intact long enough to begin to exhibit the necessary system linkages for widespread implementation to result.

Conclusion

This paper has implications for two audiences: (1) those who assist curriculum improvement, such as district curriculum coordinators, school administrators, field staff of regional and state education agencies, and college and university curriculum and instruction staff; and (2)

researchers concerned with curriculum change and school organization. For those who work with schools, Miles (1981) notes that loose linkages seem to be the norm. This study corroborates that observation. Thus, it would appear that a major tool in a change agent's arsenal would be the ability to create effective temporary systems which can compensate for the loose structure of most schools. Such a strategy proved somewhat effective in this study. But the problem came when efforts to extend the temporary system to other school staff were made. The costs in terms of time and money became great.

An alternative approach is to couple temporary systems with a strategic use of the few existing tight linkages in a school. If horizontally linked subunits or pairs of teachers can be found, the temporary system should include an individual from each of these. The existing linkages can then do a lot of the work of spreading change. Also, the temporary system should include those with authority to make curriculum decisions, whether such authority resides with an entire subunit, a chairperson, or an administrator. If most of the tight linkages appear to be vertical, then administrators are the critical actors to include. Certainly, one should not ignore the morale benefits of widespread staff participation in change decisions. But, this should not be participation for participation's sake. If participation is combined with efforts to tap existing linkages in a school, changes can be spread within a school more effectively.

A brief qualification should be noted. This paper argues that tight linkages facilitate the spread of change. One should not jump too quickly to the inference that such linkages are generally better than loose ones.

Indeed, the earlier literature on the topic primarily focuses on the benefits of cracks in a system.

For researchers, there are at least two implications. One, this study provides further evidence supporting a relationship between organizational linkages and change implementation. Most of the research has been like this study--exploratory. It now seems to be time to examine these relationships more systematically and precisely. Second, the study focuses attention on the subunit level of analysis and highlights the importance of examining the structure of subunits within the overall organization of the school. This is an important step in understanding how schools operate in that much of the previous research tends to treat schools as having a uniform structure. It would not be too surprising to find as much variation in structure within schools as between them.

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Table 2: Quantity of Implementation in the Planning Groups and in the Schools as a Whole

School	Planning Group Teachers	Planning Group Teachers Making Changes	All Teachers Making Changes
Patriot	4	4	6
Middleburg	8	8	8
Middletown	16	14	18
Southend	7	7	10
Smalltown E.	4	4	19
Smalltown M.	4	4	8
Urban	5	0	0
Farmcenter	5	3	4
Riverside	6	2	2
Suburban	4	4	6
Green Hills	6	6	12
Neighbortown	7	6	11
Bigtown	18[a]	10	11
Oldtown	20	19	19
	114	91	134

[a]Eight of these teachers were department chairpersons who had no classroom teaching responsibilities.